ENGLISH GENERAL DRAWING NOTES REVISED 12-3-2012

L 001 ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
H 001 *** 4.1.2.6 NOTES ***

L 002 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
H 002 *** 4.1.2.6 NOTES, 5.2.1 GENERAL ***

L 003 THIS BRIDGE IS LOCATED IN SEISMIC ZONE ___.
H 003 *** 4.1.2.6 NOTES ***

L 004 THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.
H 004 *** 4.1.2.6 NOTES, 5.2.1 GENERAL ****

L 005 THIS STRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A CORROSIVE SITE.
H 005 *** 4.1.2.6 NOTES ***

L 006 FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.
H 006 *** 5.1.2.5 LOCATION SKETCH ***

L 007 NO KNOWN UTILITY CONFLICTS.
H 007 *** 5.1.2.5 LOCATION SKETCH ***

L 008 BRIDGE NO._____
H 008 *** 5.1.2.6, OTHER ***

L 009 REPLACES BRIDGE NO._____
H 009 *** 5.1.2.6, OTHER ***

L 010 WIDENING OF BRIDGE NO.____
H 010 *** 5.1.2.6, OTHER ***

L 011 REHABILITATION OF BRIDGE NO.____
H 011 *** 5.1.2.6, OTHER ***

L 012 WIDENING AND REHABILITATION OF BRIDGE NO.____
H 012 *** 5.1.2.6, OTHER ***

L 013 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
H 013 *** 5.2.1 GENERAL ***

L 014 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
H 014 *** 5.2.1 GENERAL ***

L 015 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
H 015 *** 5.2.1 GENERAL ***

L 016 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
H 016 *** 5.2.1 GENERAL ***

L 017 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
H 017 *** 5.2.1 GENERAL ***

L 018 ALL FALSEWORK AND FORMS FOR THE CAST-IN-PLACE DECK SLAB CONTINUOUS UNIT SHALL REMAIN IN PLACE UNTIL THE ENTIRE UNIT IS CAST AND CURED.
H 018 *** 5.2.1 GENERAL ***

L 019 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.
H 019 *** 5.2.1 GENERAL ***

L 020 THE ELEVATION(S) AND CLEARANCE(S) SHOWN ON THE PLANS AT THE POINT(S) OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.
H 020 *** 5.2.2 STEEL MEMBERS ***

L 021 FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
H 021 *** 5.2.1 GENERAL ***

L 022 PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
H 022 *** 5.2.1 GENERAL ***

L 023 REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
H 023 *** 5.2.1 GENERAL ***

L 024 FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.
H 024 *** 5.2.1 GENERAL ***

L 025 THE RAILROAD TRACK TOP OF RAIL ELEVATIONS ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.
H 025 *** 5.2.1 GENERAL ***

L 026 ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE PAVEMENT MARKING PLANS AND SHALL PROVIDE FOR BICYCLES.
H 026 *** 5.2.1 GENERAL ***

L 027 ROADWAY WORK WILL BE DONE BY THE DIVISION OF HIGHWAYS.

H 027 *** 5.2.1 GENERAL ***

L 028 WEARING SURFACE WILL BE PLACED BY THE DIVISION OF HIGHWAYS.
H 028 *** 5.2.1 GENERAL ***

L 029 FOR ROCK EMBANKMENT AND CORE MATERIAL IN AREAS OF END BENTS, SEE ROADWAY PLANS.
H 029 *** 5.2.1 GENERAL ***

L 030 WORK ON END BENTS SHALL NOT BE STARTED UNTIL APPROACH ROCK EMBANKMENT AND CORE MATERIAL IN THE AREA OF END BENTS PILES HAVE BEEN PLACED.
H 030 *** 5.2.1 GENERAL ***

L 031 THE EXISTING PAVEMENT WITHIN THE AREA OF THE END BENT PILES SHALL BE REMOVED AND THE ROADBED SCARIFIED TO A MINIMUM DEPTH OF 2'-0".
H 031 *** 5.2.1 GENERAL ***

L 032 AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION _____.
H 032 *** 5.2.1 GENERAL ****

L 033 NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
H 033 *** 5.2.1 GENERAL ***

L 034 ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
H 034 *** 5.2.2 STEEL MEMBERS ***

L 035 ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
H 035 *** 5.2.2 STEEL MEMBERS ***

L 036 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION _____."
H 036 *** 5.2.2 STEEL MEMBERS ***

L 037 THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.
H 037 *** 5.2.3 CORROSION PROTECTION & 12-13 CORROSION PROTECTION MEASURES ***

L 038 ALL METALIZED SURFACES SHALL RECEIVE A SEAL COATING AS SPECIFIED IN THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALIZATION).
H 038 *** 5.2.3 CORROSIVE PROTECTION & 12-13 CORROSION PROTECTION MEASURES ***

L 039 CLASS AA CONCRETE SHALL BE USED IN ALL CAST-IN-PLACE COLUMNS, BENT CAPS, PILE CAPS, AND FOOTINGS, AND SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR.
H 039 *** 5.2.3 CORROSION PROTECTION & 12-13 CORROSION PROTECTION MEASURES ***

L 040 ALL BAR SUPPORTS USED IN THE (BARRIER RAIL,PARAPET,SIDEWALK,DECK,BENT CAPS,COLUMNS,PILE CAPS,FOOTINGS) AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
H 040 *** 5.2.3 CORROSION PROTECTION & 12-13 CORROSION PROTECTION MEASURES ***

L 041 THE CONCRETE IN THE (COLUMNS,BENT CAPS,PILE CAPS,FOOTINGS,AND/OR PILES) OF BENT NO._____ SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS TO PARTIALLY SUBSTITUTE CLASS F FLY ASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF FLY ASH PER 1.0 LB OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.
H 041 *** 5.2.3 CORROSION PROTECTION & 12-13 CORROSION PROTECTIVE MEASURES ***

L 042 THE MATERIALSHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF ___FT EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
H 042 *** 5.2.5 EXCAVATION AND SHORING ***

L 043 WORK SHALL NOT BE STARTED ON THIS BRIDGE (OR SPECIFIC PARTS OF BRIDGE) UNTIL ROADWAY SECTION HAS BEEN EXCAVATED.
H 043 *** 5.2.5 EXCAVATION AND SHORING ***

L 044 FOR TEMPORARY RAILROAD SHORING, SEE SPECIAL PROVISIONS.
H 044 *** 5.2.5 EXCAVATION AND SHORING ***

L 045 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE SHORING AND EXCAVATION PLANS HAVE BEEN SUBMITTED TO THE RAILROAD BY THE STATE. AS OF THE TIME OF PLAN PRINTING FOR ADVERTISEMENT FOR BIDS, RAILROAD APPROVAL HAS NOT BEEN RECEIVED. WHEN SUCH APPROVAL IS RECEIVED, THE CONTRACTOR WILL BE NOTIFIED BY ADDENDUM. IN THE EVENT RAILROAD APPROVAL IS NOT GIVEN PRIOR TO SUBMISSION OF BIDS, THE CONTRACTOR SHALL SUBMIT BIDS BASED ON THE CONTRACT PLANS. THE CONTRACTOR SHALL NOT BEGIN EXCAVATION AT THE LOCATIONS SHOWN ON THESE PLANS UNTIL NOTIFIED OF RAILROAD APPROVAL.
H 045 *** 5.2.5 EXCAVATION AND SHORING ***

L 046 STEEL SHEET PILING REQUIRED FOR SHORING SHALL BE HOT ROLLED.
H 046 *** 5.2.5 EXCAVATION AND SHORING ***

L 047 TEMPORARY SHORING WILL BE REQUIRED IN THE AREA INDICATED IN THE PLAN VIEW.
H 047 *** 5.2.5 EXCAVATION AND SHORING ***

L 048 FOR TEMPORARY SHORING, SEE SPECIAL PROVISIONS.
H 048 *** 5.2.5 EXCAVATION AND SHORING ***

L 049 FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
H 049 *** 5.2.5 EXCAVATION AND SHORING & 12-11 SHORING ADJACENT TO EXISTING STRUCTURES ***

L 050 THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION_____ FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.
H 050 *** 5.2.6 TEMPORARY STRUCTURES ***

L 051 THE BRIDGE RAILS ON THE TEMPORARY STRUCTURE SHALL BE DESIGNED FOR THE AASHTO LRFD TEST LEVEL 3 (TL-3) CRASH TEST CRITERIA. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.
H 051 *** 5.2.6 TEMPORARY STRUCTURES ***

L 052 (AFTER SERVING AS A TEMPORARY STRUCTURE) THE EXISTING STRUCTURE CONSISTING OF (NUMBER, LENGTH AND TYPE OF SPANS; CLEAR ROADWAY WIDTH AND TYPE OF FLOOR) ON (TYPE OF SUBSTRUCTURE) AND LOCATED (DISTANCE UP OR DOWNSTREAM FROM PROPOSED STRUCTURE) SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY (NOT) POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. (WHEN A SPECIAL CIRCUMSTANCE EXISTS WARRANTING A SPECIAL PROVISION, ADD TO THE NOTE: FOR ___, SEE SPECIAL PROVISION.)
H 052 *** 5.2.7 REMOVAL OF EXISTING STRUCTURES ***

L 053 THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
H 053 *** 5.2.7 REMOVAL OF EXISTING STRUCTURES ***

L 054 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

H 054 *** 5.2.7 REMOVAL OF EXISTING STRUCTURES ***

L 055 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH ``HEC 18-EVALUATING SCOUR AT BRIDGES.''
H 055 *** 5.2.8 STREAM CROSSINGS ***

L 056 THE SCOUR CRITICAL ELEVATION FOR BENT(S) NO. __ IS THE BOTTOM OF FOOTING ELEVATION. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
H 056 *** 5.2.8 STREAM CROSSINGS ***

L 057 THE SCOUR CRITICAL ELEVATION FOR BENT(S) NO. __ IS ELEVATION _____. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
H 057 *** 5.2.8 STREAM CROSSINGS ***

L 058 DESIGN DISCHARGE_____CFS.
H 058 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 059 FREQUENCY OF DESIGN FLOOD_____YEARS
H 059 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 060 DESIGN HIGH WATER ELEVATION_____
H 060 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 061 DRAINAGE AREA_____ACRES OR SQ. MI.
H 061 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 062 BASE DISCHARGE(Q100)_____CFS.
H 062 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 063 BASE HIGH WATER ELEVATION_____
H 063 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 064 OVERTOPPING FLOOD DATA
H 064 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 065 OVERTOPPING DISCHARGE_____CFS.
H 065 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 066 FREQUENCY OF OVERTOPPING FLOOD_____YRS.
H 066 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 067 OVERTOPPING FLOOD ELEVATION_____
H 067 *** 4.1.3.3 STREAM CROSSINGS, HYDRAULIC DATA ***

L 068 THE CONTRACTOR MAY USE ADHESIVELY ANCHORED (ANCHOR BOLTS/DOWELS) IN PLACE OF _____. LEVEL ___ FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE (ANCHOR BOLT/DOWELS) IS ___ kips. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.
H 068 *** 12-4 ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS ***

L 069 THE CONTRACTOR MAY USE ADHESIVELY ANCHORED (ANCHOR BOLTS/DOWELS) IN PLACE OF _____. NO FIELD TESTING IS REQUIRED. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.
H 069 *** 12-4 ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS ***

L 070 STEEL PILES FOR FENDER SYSTEMS SHALL CONTAIN 0.2% COPPER, BE METALLIZED AND HAVE A SEAL COST. FOR THERMAL SPRAYED COATINGS, SEE SPECIAL PROVISIONS.
H 070 *** 12-13 CORROSION PROTECTION ***

L 071 FOR INTERIOR BENT(S)_____, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET(S) FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.
H 071 *** 7.4.4.1 PILES ***

L 072 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
H 072 ***   ***

L 073 THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.
H 073 ***   ****

L 074 THE CONTRACTOR SHALL DRIVE ONE UNLOADED TIMBER TEST PILE AT BENT NO.__ AS DIRECTED BY THE ENGINEER FOR DETERMINING THE LENGTHS OF__ PILES. THE TEST PILE WILL BE PAID FOR AS "UNLOADED TIMBER TEST PILE". THE ORDER LENGTH FOR PILES WILL BE GIVEN AFTER THE TEST PILE HAS BEEN DRIVEN.
H 074 ***   ***

L 075 TIMBER PILES SHALL BE TREATED TO RETAIN __LBS. OF CHROMATED COPPER ARSENATE PER CUBIC FOOT OF MATERIAL.
H 075 ***   ***

L 076 ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
H 076 ***   ***